# Physics Interactive Quiz :    Rotational dynamics       Name:

| # | 2 | question | Answer | | | 0 | <--score |
|---|---|---|---|---|---|---|---|
| # 1 | 40 | cm is the radius of two masses held in the hands of a spinning ice skater, each with velocity 4 m/s. If the radius were 1/4 of this, find the final v for the masses (ignore the mass of the skater). | | 16 | 100 | 0 | |
| # 2 | 10 | kg is the mass of a bucket around a pulley. If the bucket falls 6 meters, and I for the pulley is 30, find the final w for the pulley (assume PE goes only into rotational KE) | | 6.2609 | 100 | 0 | |
| # 3 | 16 | cm is the length of a wrench turning a bolt. If a force of 60 N were applied 90° to the handle, find the torque on the bolt. | | 9.6 | 100 | 0 | |
| # 4 | 16 | Repeat with a force 45° from the axis of the wrench. | | 6.7872 | 100 | 0 | |
| # 5 | 120 | kg is the mass of a child on one side of a 6 meter long seesaw, with her brother of mass 40 kg on the other end. Find the net torque. | | 2352 | 100 | 0 | |
| # 6 | 8 | kg is the mass of a child on a different seesaw, 2 meters from the center. Find the mass of a second child 4 meters from the center to balance the seesaw. | | 4 | 100 | 0 | |
| # 7 | 8 | If either of them were to get off the seesaw, find out the torque on the seesaw (ignore the mass of the seesaw). | | 156.8 | 100 | 0 | |
| # 8 | 10 | cm is the radius of a bicycle wheel. What is the distance it covers in one revolution? | | 0.628 | 100 | 0 | |
| # 9 | 80 | How many radians is this? | | 6.28 | 100 | 0 | |
| # 10 | 80 | How many revolutions will it take to cover 1 kilometer (1000 meters)? | | 1592.4 | 100 | 0 | |

**Extra Credit:  Explain how helicopters preserve angular momentum in powered flight, including diagrams.**